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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,999	12/21/2001	Andreas N. Dorsel	10992125-2	6346

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AGILENT TECHNOLOGIES, INC.
Intellectual Property Administration
Legal Department, DL429
P. O. Box 7599
Loveland, CO 80537-0599

EXAMINER

FORMAN, BETTY J

ART UNIT

PAPER NUMBER

1634

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,999

Applicant(s)

DORSEL ET AL.

Examiner

BJ Forman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>12/21/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, Claims 1-11 is acknowledged.

Applicant argues that it would not be undue burden to examine the claims of Groups I and II because a search of Groups I and II would require a search of 435/283.1. However, it is maintained that undue burden would be required to examine the claims of Group II along with claims of Group I as evidenced by the fact that the claims of Groups I and II have acquired a separate status in the art as recognized by their different classifications as recognized by their divergent subject matter **and** because a search of the subject matter of invention I is not co-extensive with a search of inventions II. Specifically, a search of the subject matter of invention I would encompass a search of scanning microarrays and scanning multiple sites on the microarrays, a search of signal detection, a search of emitted signals. In contrast, a search of the subject matter of invention II would encompass a search of light systems having variable power, scanning systems, detectors and system controllers. As such, a search for the subject matter of invention I would not be co-extensive with a search for the subject matter of invention II.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claims 1-11 are indefinite in Claim 1, step (c) for the recitation "the interrogating light power" because the recitation lacks proper antecedent basis in the claim. It is suggested that Claim 1 be amended to provide proper antecedent basis e.g. replace "the interrogating light power" with "power of the interrogating light"

b. Claims 1-11 are indefinite in Claim 1, step (c) for the recitation "the array scan" because the recitation lacks proper antecedent basis in the claim. It is suggested that Claim 1 be amended to provide proper antecedent basis e.g. replace "array scan" with "scanning".

c. Claims 1-11 are indefinite in Claim 1, step (c) for the recitation "the emitted signal....outside a predetermined range" because it is unclear whether the "range" refers to a range of intensity, a range of wavelength, a range of locations, or some other undescribed range. It is suggested that Claim 1 be amended to clarify.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bengtsson (U.S. Patent No. 6,078,390, filed 4 May 1998) in view of Rava et al (U.S. Patent No. 5,874,219, filed 9 April 1996).

Regarding Claim 1, Bengtsson teaches a method comprising: scanning an interrogating light across multiple sites on an array package which scanned sites include multiple features of the array; detecting signals from respective scanned sites emitted in response to the interrogating light; and altering the interrogating light power for a first site on the array package during the array scan based on location of the first site or on a determination that the emitted signal from the first site will be outside a predetermined range absent the altering (Column 6, line 1-Column 7, line 60). Bengtsson teaches the method wherein the multiple sites on the array are elements arranged in the commonly known microarray (Column 5, lines 28-31) but they do not specifically teach their microarray includes an addressable array of multiple features of different moieties. However, microarray including an addressable array of multiple features of different moieties were well known in the art at the time the claimed invention was made as taught by Rava et al (Abstract). Rava et al teach a similar method comprising: scanning an interrogating light across multiple sites on an array package which scanned sites include multiple features of the array; detecting signals from respective scanned sites emitted in response to the interrogating light (Column 5, lines 40-56) wherein the array includes an addressable array of multiple features of different moieties (Column 2, lines 35-42) and wherein the method provides for high throughput assays thereby improving efficiency of assay performance (Column 4, lines 33-40).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the addressable multiple feature arrays of Rava et al to the microarray detection of Bengtsson to thereby detect high throughput assays for the expected benefit of improving efficiency of assay performance as taught by Rava et al (Column 4, lines 33-40).

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Regarding Claim 2, Bengtsson teaches the method wherein the interrogating light power is reduced based on a determination that the emitted signal will exceed a predetermined value (Column 2, lines 22-39 and Column 6, lines 44-64).

Regarding Claim 3, Bengtsson teaches the method wherein the interrogating light power is increased based on a determination that the emitted signal will be below a predetermined value (Column 2, lines 22-39 and Column 6, lines 44-64).

Regarding Claim 4, Bengtsson teach the method wherein the determination is based on the emitted signal detected from the first site (Column 6, lines 23-29).

Regarding Claim 5, Bengtsson teach the method wherein interrogating light power is altered based on the signal emitted from the first site when the light initially illuminates the first site (Column 6, lines 23-43).

Regarding Claim 6, Bengtsson teaches the method wherein the first site is an array feature (Column 5, lines 27-43).

Regarding Claim 7, Bengtsson teaches a method comprising: calibrating an interrogating light power versus a control signal characteristic from a light system which provides the interrogating light of a power which varies in response to the control signal characteristic; scanning an interrogating light across multiple sites on an array package which scanned sites include multiple features of the array; detecting signals from respective scanned sites emitted in response to the interrogating light; and altering the interrogating light power for a first site on the array package during the array scan based on location of the first site or on a determination that the emitted signal from the first site will be outside a predetermined range absent the altering (Column 6, line 1-Column 7, line 60). Bengtsson teaches the method wherein the multiple sites on the array are elements arranged in the commonly known microarray (Column 5, lines 28-31) but they do not specifically teach their microarray includes an addressable array of multiple features of different moieties. However, microarray including an addressable array of multiple features of different moieties were well known in the art at the

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time the claimed invention was made as taught by Rava et al (Abstract). Rava et al teach a similar method comprising: scanning an interrogating light across multiple sites on an array package which scanned sites include multiple features of the array; detecting signals from respective scanned sites emitted in response to the interrogating light (Column 5, lines 40-56) wherein the array includes an addressable array of multiple features of different moieties (Column 2, lines 35-42) and wherein the method provides for high throughput assays thereby improving efficiency of assay performance (Column 4, lines 33-40).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the addressable multiple feature arrays of Rava et al to the microarray scanning of Bengtsson to thereby scan and detect high throughput assays for the expected benefit of improving efficiency of assay performance as taught by Rava et al (Column 4, lines 33-40).

Regarding Claim 8, Bengtsson teach the method wherein a microarray is scanned (Column 5, lines 27-67) but they do not teach that their scanning is repeated for each of multiple array packages. However, Rava et al teach the similar method wherein multiple arrays are scanned (Column 4, lines 24-30 and Column 5, lines 40-56) and wherein the method provides for high throughput assays thereby improving efficiency of assay performance (Column 4, lines 33-40).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the multiple array scanning of Rava et al to the microarray scanning of Bengtsson to thereby scan and detect high throughput assays for the expected benefit of improving efficiency of assay performance as taught by Rava et al (Column 4, lines 33-40).

Regarding Claim 9, Bengtsson teaches the method wherein the light system includes a light source and an optical attenuator through which light from the source passes to provide the interrogating light and wherein the control signal comprises a signal from the optical

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attenuator which provides a variable attenuation in response to the characteristic of the control (Column 3, line 32-Column 4, line 7).

Regarding Claim 10, Bengtsson teaches the method wherein the interrogating light power is reduced based on a determination that the emitted signal will exceed a predetermined value (Column 2, lines 22-39 and Column 6, lines 44-64).

Regarding Claim 11, Bengtsson teach the method wherein the determination is based on the emitted signal detected from the first site (Column 6, lines 23-43).

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-11 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 6,406,849.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to methods comprising scanning interrogating light across multiple sites of a microarray, detecting signals from the sites and altering interrogating light based on the detected signals. The claims differ only in the patent claims further limit the interrogating light as being generated from a variable optical attenuator and

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detecting a power of the light from the attenuator. However, the instant claims recite the open claim language "comprising". Therefore, the instant claims encompass the additional limitations of the patent claims. Furthermore, because the instant claims encompass the patent claims, the instantly claimed methods are deemed to be genus to the patented methods.

The courts have stated that a genus is obvious in view of the teaching of a species see Slayter, 276 F.2d 408, 411, 125 USPQ 345, 347 (CCPA 1960); and In re Gosteli, 872 F.2d 1008, 10 USPQ2d 1614 (Fed. Cir. 1989). Therefore the instantly claimed methods (i.e. genus) are obvious in view of the '849, methods (i.e. species).


Conclusion

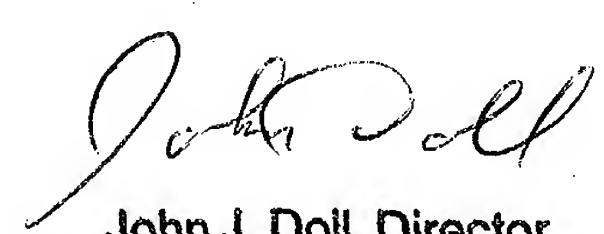
8. No claim is allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878. The examiner can normally be reached on 6:30 TO 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (703) 308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.


BJ Forman, Ph.D.
Patent Examiner
Art Unit: 1634
June 3, 2003


John J. Doll, Director
Technology Center 1600